



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/523,149	01/24/2005	Yossi Kaplan	11001.1020	8803
35856 7590 09/27/2007 SMITH FROHWEIN TEMPEL GREENLEE BLAHA, LLC Two Ravinia Drive Suite 700 ATLANTA, GA 30346			EXAMINER AJIBADE AKONAI, OLUMIDE	
			ART UNIT 2617	PAPER NUMBER
			MAIL DATE 09/27/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/523,149	KAPLAN ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Olumide T. Ajibade-Akonai	2617	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 02 August 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 41-54 and 56-67 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 41-54 and 56-67 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 January 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |                                                                                                            |                                                                                         |
|------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____                                                |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 2 August 2007 has been entered.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 41-54, and 56-67 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 41, 53, and 63 the phrase "such as" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and

Art Unit: 2617

the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 41, 48, 49, 52, 56, 64 and 66 rejected under 35 U.S.C. 103(a) as being unpatentable over by **Bahl et al 6,385,454 (hereinafter Bahl)** in view of **Fan 6,552,682**.

Regarding **claim 41**, Bahl discloses a method for correlating a vehicle with the road on which it travels based on cellular communication, the method comprising the steps of: gathering a sequence of events, such as call processing events or location related events from the cellular network (UMP, see col. 8, lines 57-67, col. 11, lines 60-65), together with the road location of the mobile unit at the timing of these events

Art Unit: 2617

(occurrence times, see col. 8, lines 39-41; col. 11, lines 60-65) as a location reference and creating a learnt database (UMPs are stored in a user profile memory 33, see fig. 2, col. 8, lines 33-35); and conducting analysis of new data (UAP, see col. 8, lines 25-30), generated from communication with another mobile unit on a new drive that does not contain location reference in conjunction with the learnt database to match a sequence of reports to a specific route (the user's actual path UAP is compared to the user's mobility pattern UMP, see col. 9, lines 25-39); whereas the data is processed to overcome the problem of similar sequences for neighboring routes (the UAP is compared to the UMP in order to provide the predicted present route of the mobile unit, see col. 8, lines 25-39).

Bahl does not specifically disclose wherein the road location of a mobile is determined by a location determination system, such as GPS.

In an analogous art, Fan discloses wherein the road location of a mobile is determined by a location determination system, such as GPS (determination of location of a mobile unit using GPS, see figs. 1 and 2, col. 3, lines 18-22, 35-48, claim 1).

It would therefore have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Fan, by determining the having a GPS receiver in the mobile unit(s) to receive positioning signals from GPS satellites for the benefit of determining the location/position of the mobile unit based on received GPS signals.

Regarding **claim 48**, as applied to claim 1, Bahl further discloses where as the analysis stage comprises of: matching cell chains from new drives to the learnt

Art Unit: 2617

database by searching for a chain of J cells that has at least K ( $K \leq J$ ) cells that appear in the same order, both in a chain from the new drive as well as in a chain from the learnt database, whereas J and K may vary for different route sections (the user's actual path UAP is compared to the user's mobility pattern UMP, see col. 9, lines 25-39); assigning the route of the chain from the learnt database to the new chain that was matched (the UAP is compared to the UMP in order to provide the predicted present route of the mobile unit, see col. 8, lines 25-39).

Regarding **claim 49**, as applied to claim 48, Bahl further discloses where as the analysis stage includes a secondary matching procedure comprising of matching cells before and after the match we have detected in the initial stage by following the raw data chains in the learnt database backward and forward relative to the matched chain and looking for an L out of M ( $L \leq M$ ) cells match where as M is typically smaller than J, where as L and M may vary for different route sections (the user's actual path UAP is compared to the user's mobility pattern UMP, see col. 9, lines 25-39).

Regarding **claim 52**, as applied to claim 41, Bahl further discloses where as the analysis of new drives is conducted based only on cell ID data (see col. 8, lines 17-39).

Regarding **claim 56**, as applied to claim 41, Bahl further discloses where as the analysis stage comprises of: matching cell chains from new drives to chains in the learnt database the user's actual path UAP is compared to the user's mobility pattern UMP, see col. 9, lines 25-39), filter out new chains that were matched with chains in the learnt database which represent more than one route section the UAP is compared to the



Art Unit: 2617

UMP in order to provide the predicted present route of the mobile unit, see col. 8, lines 25-39).

Regarding **claim 64**, as applied to claim 41, Bahl further discloses whereas the method is used for areas where at least 2 roads are covered, at least partially, by the same 2 or more cells (inherent, since the storing of multiple UMPs in the user profile memory indicates that multiple routes/roads are covered, see col. 8, lines 40-56).

Regarding **claim 66**, as applied to claim 41, Bahl further discloses where as further analysis is conducted to continuously update the learnt database, the analysis comprising the steps of: estimating the location of handovers within matched sequences that do not appear in the database (see col. 8, lines 40-60); and adding new matched sequences to the learnt database (when UAP is different from stored UMP by more than a threshold amount of cells, the UAP is stored in a user profile memory 33 as a new UMP, see col. 8, lines 57-60).

6. Claims 47, 50 and 57 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Bahl et al 6,385,454 (hereinafter Bahl)** in view of **Fan 6,552,682** as applied to claim 41 above, and further in view of (**hereinafter Rudrapatna**).

Regarding **claim 47**, as applied to claim 41, Bahl, as modified by Fan discloses the claimed invention except where as in the learning phase the accuracy level of a handover is calculated in one or a combination of the following ways: using signal strength measurements to detect sharp decays in signal strength resulting in a handover and thus determine handovers accuracy level; measuring the location spread

Art Unit: 2617

of handovers between the same cells for different trips over the same route to determine handover accuracy level and average location.

In the same field of endeavor, Rudrapatna discloses using signal strength measurements to detect sharp decays in signal strength resulting in a handover and thus determine handovers accuracy level (see figs. 1-3, col. 3, lines 21-51); measuring the location spread of handovers between the same cells for different trips over the same route to determine handover accuracy level and average location.

It would therefore have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Rudrapatna into the system of Bahl, as modified by Fan for the purpose of determining the location of a mobile phone in a cell.

Regarding **claim 50** as applied to claim 41, Bahl further discloses where as an analysis is conducted to detect the vehicle location in specific points along the route comprises of: extracting matching handovers (cell pairs) information of a new chain (location, timing, accuracy) from chains in the learnt database that were matched with it (the UAP is compared to the UMP in order to provide the predicted present route of the mobile unit, see col. 8, lines 25-39).

Bahl, as modified by Fan fails to disclose calculating location and accuracy of handovers in the new chain according to handovers from the extracted chains from the learnt database that relate to the same route section and contain the same cell pairs.

Rudrapatna, however, further discloses calculating location and accuracy



Art Unit: 2617

of handovers in the new chain according to handovers from the extracted chains from the learnt database that relate to the same route section and contain the same cell pairs (see figs. 1-3, col. 3, lines 21-51).

It would therefore have been obvious to one of ordinary skill in the art at the time the invention was made to further modify the combination of Bahl, as modified by Fan and Rudrapatna for the purpose of determining the location of a mobile phone in a cell.

Regarding **claim 57** as applied to claim 41, Bahl further discloses where as an analysis is conducted to detect the vehicle location in specific points along the route comprises of: extracting matching handovers (cell pairs) information of a new chain (location, timing, accuracy) from chains in the learnt database that were matched with it (the UAP is compared to the UMP in order to provide the predicted present route of the mobile unit, see col. 8, lines 25-39).

Bahl, as modified by Fan fails to disclose calculating location and accuracy of handovers in the new chain according to handovers from the extracted chains from the learnt database that relate to the same route section and contain the same cell pairs.

Rudrapatna, however, further discloses calculating location and accuracy of handovers in the new chain according to handovers from the extracted chains from the learnt database that relate to the same route section and contain the same cell pairs (see figs. 1-3, col. 3, lines 21-51).

Art Unit: 2617

It would therefore have been obvious to one of ordinary skill in the art at the time the invention was made to further modify the combination of Bahl, as modified by Fan and Rudrapatna for the purpose of determining the location of a mobile phone in a cell.

### ***Response to Arguments***

7. Applicant's arguments with respect to claims 41-54, and 56-67 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***


8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Olumide T. Ajibade-Akonai whose telephone number is 571-272-6496. The examiner can normally be reached on M-F, 8.30p-5p.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rafael Perez-Gutierrez can be reached on 571-272-7915. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2617

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

OA  
OA

  
Rafael Perez-Gutierrez  
Supervisory Patent Examiner  
Technology Center 2600  
Art Unit 2617

2/25/09